

## REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed January 1, 2007. The Examiner is thanked for the thorough examination of the present application. Claims 1-13 remain pending in the present application. The drawings were objected to for failing to comply with 37 CFR §1.121(d). Claims 1-13 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Quigley, et al.* (U.S. Pub. No. 2006/0088056), in view of *Radko* (U.S. Pat. No. 5,687,392), further in view of *Cowger, et al.* (U.S. Pat. No. 6,314,477). Applicants respectfully request consideration of the following remarks contained herein. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

### I. In the Drawings

On page 2, the Office Action indicates that the drawings are objected to for failing to comply with 37 CFR §1.121(d). In the "Notice of Draftperson's Patent Drawing Review," it is requested that shading be removed from various figures. It is further noted that some of the figures are not legible. Applicants appreciate Examiner Chan's time in discussing the objections to the drawings during a telephone conversation on April 23, 2007. Applicants thank the Examiner for agreeing to hold the objection to the drawings in abeyance until indication of allowable subject matter is received. Accordingly, Applicants have not submitted replacement drawings with the present response, but will do so after receiving an indication of allowable subject matter.

## II. Response to Claim Rejections Under 35 U.S.C. § 103

Claims 1-13 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Quigley*, in view of *Radko*, further in view of *Cowger*. For at least the reasons set forth below, Applicants traverse these rejections. The U.S. Patent and Trademark Office has the burden under section 103 to establish a *prima facie* case of obviousness according to the factual inquiries expressed in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). The four factual inquiries, also expressed in MPEP §2141, are as follows:

- (A) Determining the scope and contents of the prior art;
- (B) Ascertaining the differences between the prior art and the claims in issue;
- (C) Resolving the level of ordinary skill in the pertinent art; and
- (D) Evaluating evidence of secondary considerations.

Applicants respectfully submit that a *prima facie* case of obviousness is not established using the art of record and request consideration of the remarks below.

### **Independent Claim 1 is Patentable Over Quigley, in View of Radko, Further in View of Cowger**

Applicants respectfully submit that independent claim 1 patentably defines over *Quigley* and *Radko* for at least the reason that the combination fails to disclose, teach or suggest certain features in claim 1. Claim 1 recites (emphasis added):

1. A method for transferring network packet data stored in memory to an output device, the method comprising the steps of:  
**concatenating one or more packet data octets from at least a first data word having at least one packet data octet** to be included in a network packet to generate a first sequence of packet data octets having an octet length at least as great as an octet length of a data word;

**storing the first sequence of packet data octets in a FIFO buffer operably connected to the output device when the octet length of the sequence of packet data octets is equal to the octet length of a data word;** and

storing a first subset of packet data octets from the first sequence of packet data octets in the FIFO buffer and **storing a remaining second subset of packet data octets from the first sequence in an alignment register when the octet length of the first sequence of packet data octets exceeds the octet length of a data word**, wherein an octet length of the first subset of packet data octets is equal to the octet length of a data word.

The Office Action appears to rely on the *Quigley* reference to teach most of the features in claim 1. On page 4, the Office Action alleges that *Quigley* teaches of “concatenating one or more packet data octets from at least a first data word having at least one packet data octet” and cites FIG. 15 and paragraph 279 of the reference. As shown in FIG. 15 of *Quigley* (reproduced below for the Examiner’s convenience) shows a plurality of data bursts separated by guard bands (such as those transmitted by cable modems to a cable modem termination system according to time division multiple access (TDMA)). However, the mere presence of a data stream comprising data bursts is not equivalent to the feature of “concatenating one or more packet data octets.”

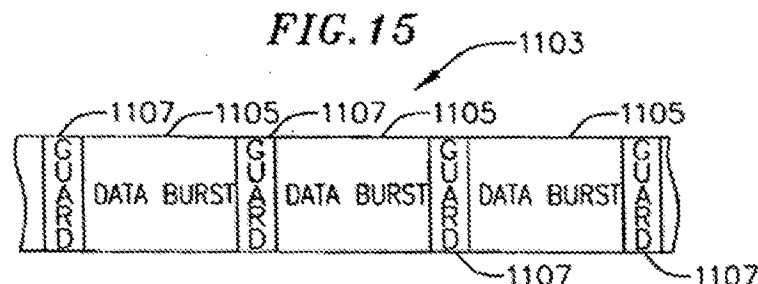


FIG. 15 of the *Quigley* reference does not show the step of “concatenating one or more packet data octets” as the figure clearly shows guard bands (1107) separating the

data packets. (In contrast, claim 1 clearly recites concatenating one or more packet data octets.) Paragraph 279 states the following (emphasis added):

Referring now to FIG. 15, data bursts 1105 define **a discontinuous data stream 1103**. The data bursts 1105 are typically defined by **data packets** and are separated by guard bands 1107.

Other than the mention of “data packets” above, *Quigley* does not disclose, teach, or suggest the step of “concatenating one or more packet data octets from at least a first data word having at least one packet data octet,” as alleged by the Office Action. In fact, the data bursts (1105) define a discontinuous data stream (1103). Applicants respectfully submit that concatenating one or more packet data octets is not inherently taught in the paragraph 279, as alleged by the Office Action on page 9. Applicants respectfully traverse the finding of inherency and respectfully submit that inherency has not been established. It is well established that “[t]o establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In Re Anthony J. Robertson*, 169 F.3d 743, 745, 49 U.S.P.Q.2D (BNA) 1949, 1950-51 (Fed. Cir. 1999).

The Office Action further alleges on page 4 that *Quigley* teaches of “storing the first sequence of packet data octets in a FIFO buffer operably connected to the output device when the octet length of the sequence of packet data octets is equal to the octet length of a data word.” The Office Action alleges that the downstream data FIFO (533) in FIG. 8A is “operably connected” to the output device (which the Office Action equates

to the SRAM (314) in FIG. 7B). However, Applicants respectfully submit that the combination of the FIFO (533) and the SRAM (314) do not teach the feature of “storing the first sequence of packet data octets in a FIFO buffer operably connected to the output device.” The *Quigley* reference states (emphasis added):

The decrypted data is then introduced from a downstream (D/S) direct memory access (DMA) 306 through a memory interface 308 in a DMA controller 312 to a first area in a **static random access memory (SRAM) 314**. The control information also passes through a DMA 391 and the memory interface 308 in the DMA controller 312 to a second area in the **SRAM 314**.

(Paragraph 231)

The interface 328 provides a control for a direct memory access (DMA) engine 329 similar in construction to the DMA 306 in FIG. 7B. The packets from the data queue 327 are stored in a downstream (D/S) data buffer or **FIFO 533**.

(Paragraph 236)

The text passages above fail to teach “a FIFO buffer operably connected to the output device.” Even assuming, *arguendo*, that *Quigley* does teach a FIFO buffer operably connected to the output device (SRAM), *Quigley* fails to teach of “storing the first sequence of packet data octets in a FIFO buffer operably connected to the output device under the following condition: when the octet length of the sequence of packet data octets is equal to the octet length of a data word.” That is, FIG. 15 in *Quigley* (as cited by the Office Action) fails to teach of storing the first sequence of packet data . . . **when** the octet length of the sequence of packet data octets is equal to the octet length of a data word.” Without providing further details, the Office Action only refers again to the “discontinuous data stream” 1103. *Quigley* fails to teach the features in claim 1 as

alleged by the Office Action. Furthermore, *Radko* and *Cowger* also fail to teach these features.

As an independent basis for patentability, Applicants submit that even if *Quigley* does teach the features in claim 1 as alleged by the Office Action (which it does not), it would not have been obvious to combine the *Quigley* reference with the *Radko* reference. The Office Action merely concludes that the two references relate to the same field of endeavor without providing support. *Quigley* is directed to data packet fragmentation in a cable modem system and relates to communication between cable modems and a cable modem termination system. *Radko* is directed to a method and apparatus for efficiently transferring data between an I/O device and a main memory area of a computer system. There is no motivation to combine the *Quigley* and *Radko* references.

However, assuming *arguendo* that there is a proper motivation to combine these two references, the combination still fails to teach the features emphasized in claim 1. As admitted by the Office Action on page 9, *Quigley* fails to disclose how to handle data octets which exceeds the octet length of a data word. However, *Radko* also fails to teach this feature. The Office Action equates the dynamically allocated DMA buffer (387) in FIG. 3 of *Radko* with an alignment register. Col. 7, lines 58-61 of *Radko* recites (emphasis added):

Alternatively, when the evaluator 381 determines that the user buffer is of **a suitable size** for DMA block transfer, the dynamic allocator 383 dynamically allocates a DMA transfer buffer 387 (step 440).

However, Applicants submit that the cited text above fails to teach the feature of “storing a remaining second subset of packet data octets from the first sequence in an alignment

register when the octet length of the first sequence of packet data octets exceeds the octet length of a data word.” While *Radko* teaches of making a determination of whether the user buffer is of a suitable size for DMA block transfer and then dynamically allocating a DMA transfer buffer 387, this is not equivalent to storing a remaining second subset of packet data octets from the first sequence in an alignment register when the octet length of the first sequence of packet data octets exceeds the octet length of a data word.

Accordingly, Applicants respectfully submit that independent claim 1 patently defines over *Quigley*, in view of *Radko*, further in view of *Cowger* for at least the reason that the combination fails to disclose, teach or suggest the highlighted features in claim 1 above.

**Dependent Claims 2-4 are Patentable**

Applicants submit that dependent claims 2-4 are allowable for at least the reason that these claims depend from an allowable independent claim. See, e.g., *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

**Independent Claim 5 is Patentable Over Quigley, in View of Radko, Further in View of Cowger**

Applicants respectfully submit that independent claim 5 patently defines over *Quigley* and *Radko* for at least the reason that the combination fails to disclose, teach or suggest certain features in claim 5. Claim 5 recites (emphasis added):

5. A system for transferring network packet data stored in memory to an output device, the system comprising:  
a direct memory access (DMA) interface for accessing a set of data words stored in memory, each data word having at least one valid octet to

be included in a network packet and each data word being accessed using a DMA address associated with the data word;

a first in-first out (FIFO) buffer for storing network packet data to be transmitted by the output device; and

an alignment block having at least one alignment register, wherein the alignment register for storing at least one data octet, and wherein **the alignment block is adapted to:**

**concatenate one or more packet data octets from at least a first data word having at least one packet data octet to be included in a network packet to generate a first sequence of packet data octets having an octet length at least as great as an octet length of a data word;**

**store the first sequence of packet data octets in a FIFO buffer operably connected to the output device when the octet length of the sequence of packet data octets is equal to the octet length of a data word;** and

store a first subset of packet data octets from the first sequence of packet data octets in the FIFO buffer and storing a remaining second subset of packet data octets from the first sequence in an alignment register when the octet length of the first sequence of packet data octets exceeds the octet length of a data word, wherein an octet length of the first subset of packet data octets is equal to the octet length of a data word.

As with claim 1, the Office Action appears to rely on the *Quigley* reference to teach most of the features in claim 5. In rejecting claim 5, the Office Action relies on *Radko* to teach the alignment block and then relies on *Quigley* to teach the feature: “concatenate one or more packet data octets from at least a first data word . . . .” However, as emphasized above, claim 5 clearly recites: “the alignment block is adapted to: concatenate one or more packet data octets from at least a first data word . . . .” Applicants submit that the alignment block recited in claim 5 should be read in its proper context. Claim 5 recites an alignment block adapted to concatenate one or more packet data octets from at least a first data word . . . . The “dynamically allocated transfer buffer” in the *Radko* reference does not function to “concatenate one or more packet data octets from at least a first data word having at least one packet data octet to be



included in a network packet to generate a first sequence of packet data octets having an octet length at least as great as an octet length of a data word,” as recited in claim 5.

Even if *Quigley* could be properly combined with the *Radko* reference, *Quigley* fails to teach of concatenating one or more packet data octets. As discussed in depth above, Applicants respectfully submit that concatenating one or more packet data octets is not inherently taught in the paragraph 279, as alleged by the Office Action on page 9. Applicants respectfully traverse the finding of inherency. Paragraph 279 of the *Quigley* reference only refers to a discontinuous data stream (1103) where the data bursts (1105) are defined by data packets that are separated by guard bands (1107). Applicants respectfully submit that inherency has not been established. *Quigley* therefore fails to teach this feature. Furthermore, *Radko* and *Cowger* also fail to teach this feature.

Accordingly, Applicants respectfully submit that independent claim 5 patently defines over *Quigley*, in view of *Radko*, further in view of *Cowger* for at least the reason that the combination fails to disclose, teach or suggest the highlighted features in claim 5 above.

**Dependent Claims 6-13 are Patentable**

Applicants submit that dependent claims 6-13 are allowable for at least the reason that these claims depend from an allowable independent claim. See, e.g., *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

**V. Prior Art Made of Record**

The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

**CONCLUSION**

Applicants respectfully submit that all pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephone conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

No fee is believed to be due in connection with this response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,

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